

Application No. 10/635,616  
Reply After Final dated May 31, 2005  
Reply to Office Action dated March 1, 2005

**IN THE DRAWINGS:**

The attached drawing sheet includes a new Figure 1.

### REMARKS

Favorable consideration and allowance are requested for claims 7-30 in view of the following remarks.

#### Status of the Application

Claims 7-26 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 7-26 were rejected under 35 U.S.C. § 102(b) as being anticipated by N. Karmarkar, "A New Polynomial-Time Algorithm for Linear Programming," *Combinatorica* 4(4) (1984), pp. 373-395 (the "Karmarkar article"). A figure was indicated as being required under 37 C.F.R. § 1.81. Minor amendments have been made to the specification. Claims 27-30 have been added. Figure 1 has been added.

#### Amendment to the Specification

Two minor amendments have been made to the specification to refer to the addition of Figure 1. No new matter has been added.

#### Added Drawing

The Examiner indicated that the subject matter of this application requires a drawing to facilitate understanding of the invention. In response, Figure 1 has been added to the application. No new matter has been added.

#### Rejection under 35 U.S.C. § 101

According to the Examiner, claims 7-26 "are directed to a mathematical algorithm or abstract idea without a practical application." The Examiner cited MPEP § 2106 in support of the rejection.

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Applicants respectfully submit that the rejection under 35 U.S.C. § 101 is misplaced. MPEP § 2106 requires a “review [of] the complete specification, including the detailed description of the invention, any specific embodiments that have been disclosed, the claims and any specific, substantial, and credible utilities that have been asserted for the invention.” Based on such a review, it is readily apparent that the “specific, substantial, and credible utilities” for the invention set forth in independent claims 7 and 13 are for “selecting a solution to a linear optimization problem for fuel-optimized selection of a configuration of thrusters on a spacecraft.” The result of the calculations set forth in the independent claims unquestionably provides a “useful, concrete, and tangible result.” *See generally* State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998).

In particular, the rejection notes “that the preamble to claim 1 [presumably referring to claim 7] is given no patentable weight as the elements recited therein are not referred to in the body of this method claim.” In response, Applicants submit that “said solution” in the body of claim 7 is to the linear optimization problem for the fuel-optimized selection of the configuration of thrusters. For these reasons Applicants respectfully submit that claims 7 and 13 are directed to statutory subject matter, and, therefore, request that the rejection of these claims be withdrawn. As claims 8-12 and 14-26 depend either directly or indirectly from claims 7 and 13, respectively, Applicants respectfully request that the rejection of these claims be withdrawn as well. In addition, Applicants

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respectfully assert that each of newly added claims 27-30 also constitutes statutory subject matter.

Rejection under 35 U.S.C. § 102(b)

According to the Examiner, as claims 7-26 lack utility, they are only “a mathematical calculation for obtaining a solution to a linear equation,” and, therefore, are anticipated by the Karmarkar article. For the reasons stated above, Applicants respectfully submit that the claims do not lack utility, and, therefore, request that the rejection of claims 7-26 be withdrawn. In addition, for the reasons stated above, Applicants respectfully assert that each of newly added claims 27-30 is not subject to this rejection.

\* \* \* \* \*

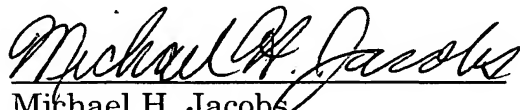
If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

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If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #010408.52553US).

Respectfully submitted,

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